The Awesome, Wonderful, Beautiful, Exciting and Terrible Climate of the West – What a Hoot!

Nolan J. Doesken, State Climatologist
Colorado Climate Center

Presented to Four States Irrigation Council, 54th Annual Meeting, January 17-19, 2007, Fort Collins, Colorado

Prepared by Odie Bliss

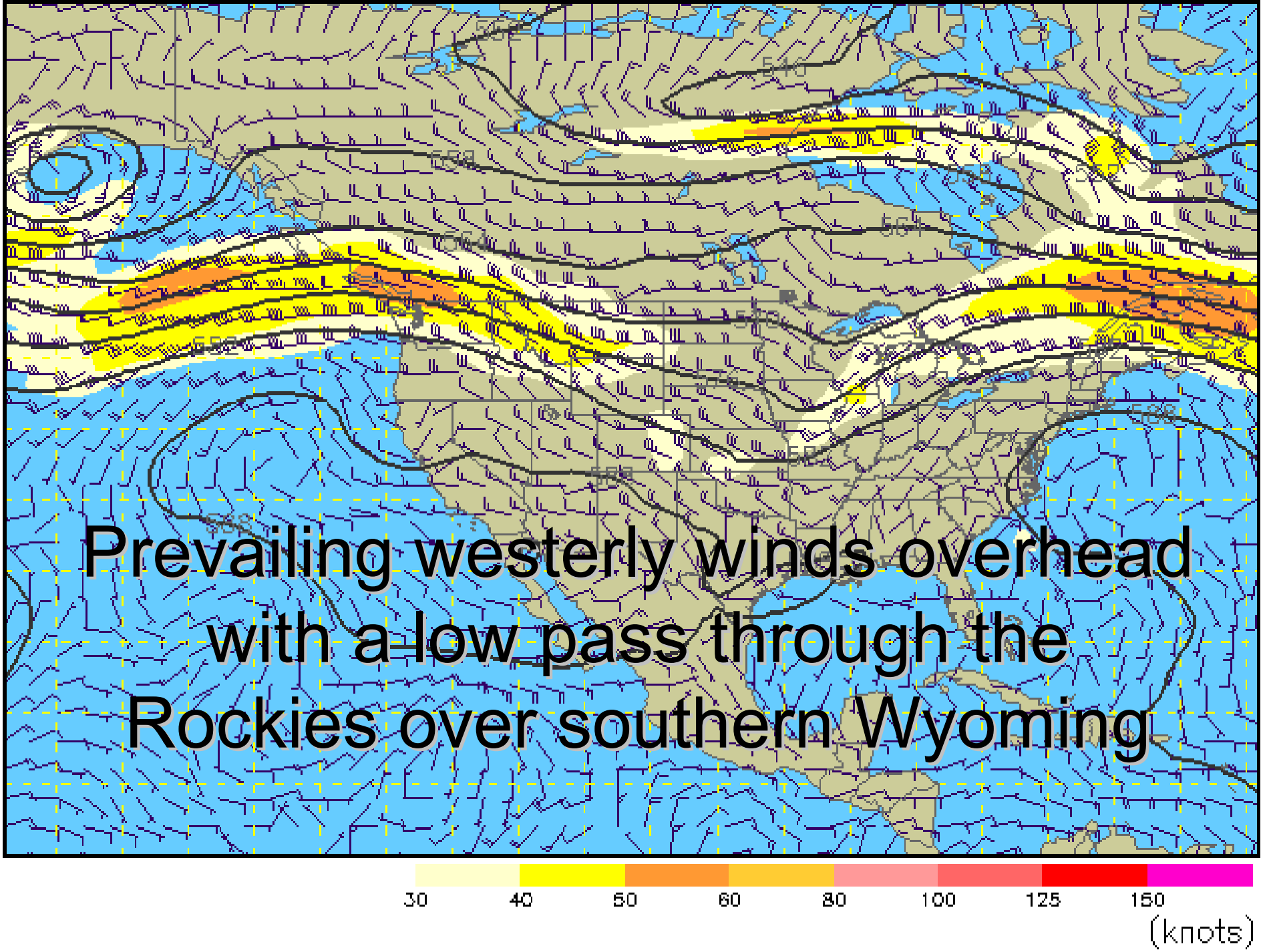
Colorado State University
Knowledge to Go Places

Why is our climate “So Special?”

We are in the middle of our continent a long way from the nearest ocean and midway between the equator and the North Pole

- A straight shot from the Arctic
- A straight shot from the Gulf of Mexico

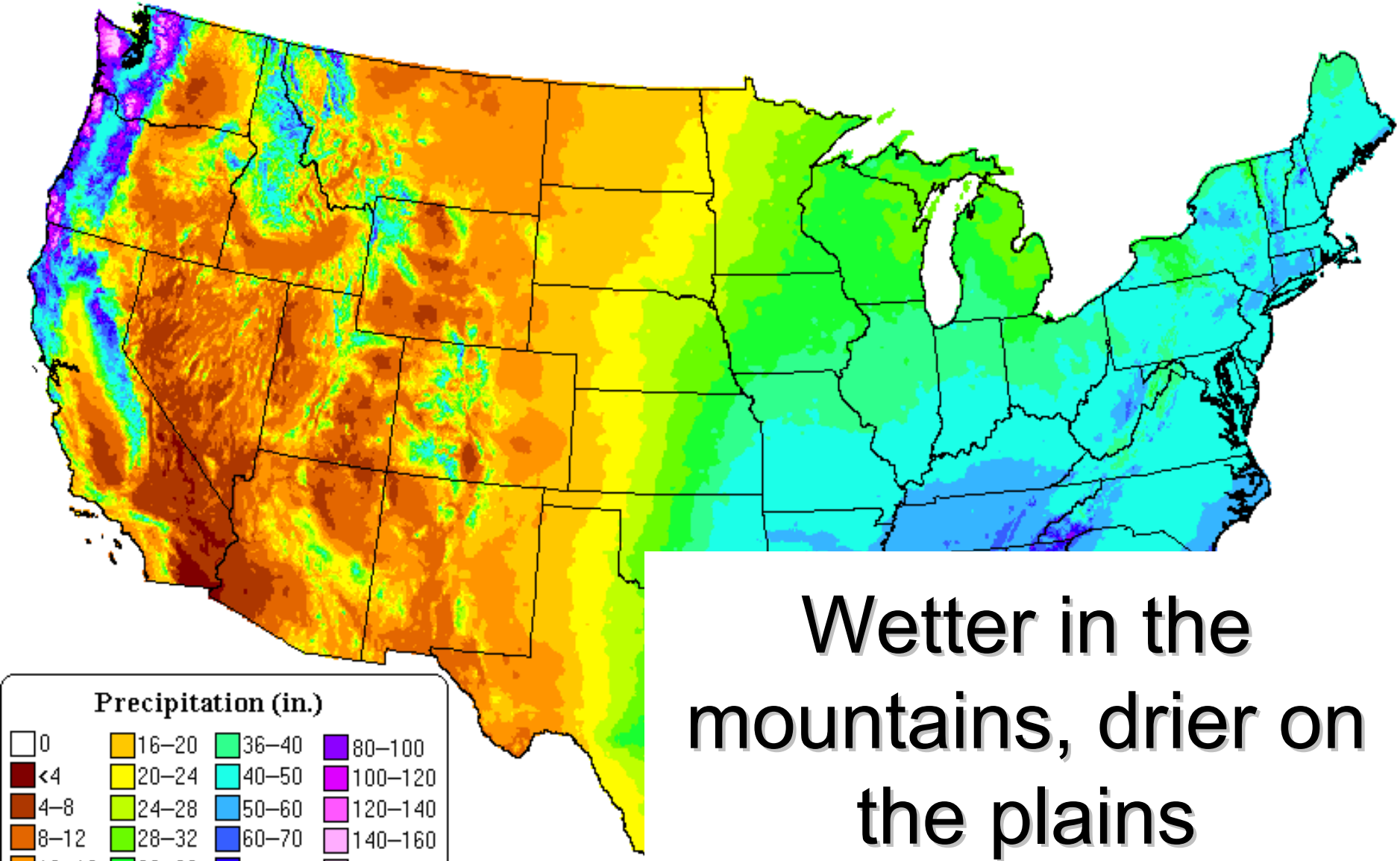
High Altitude Plains – With a Huge Mountain Barrier to our West


Prevailing westerly winds overhead
with a low pass through the
Rockies over southern Wyoming
30
40
50
60
80
100
125
150
(knots)


Not enough tall vegetation to slow the winds

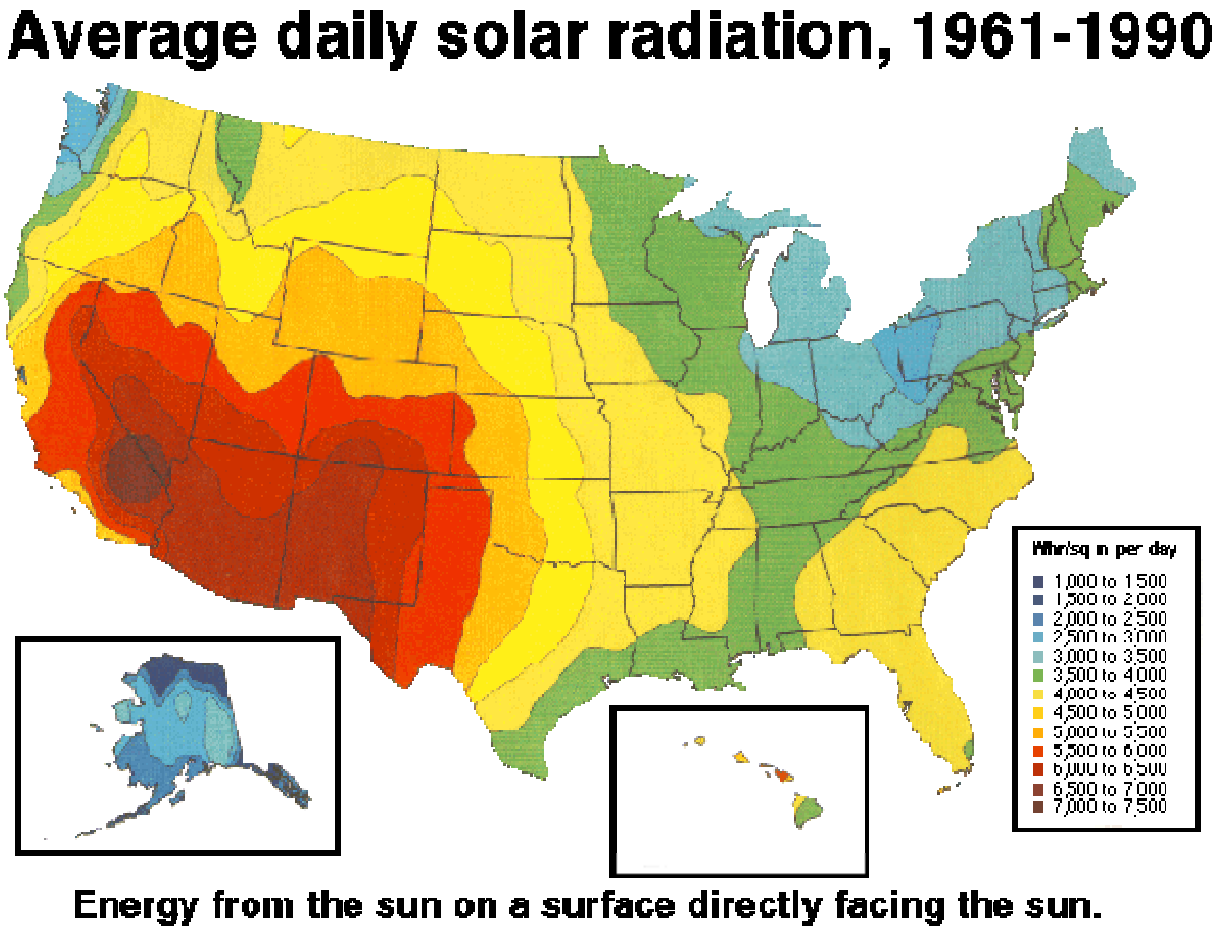

What is the result?

Precipitation: Annual Climatology (1971–2000)



Wetter in the mountains, drier on the plains

Lots of sunshine!

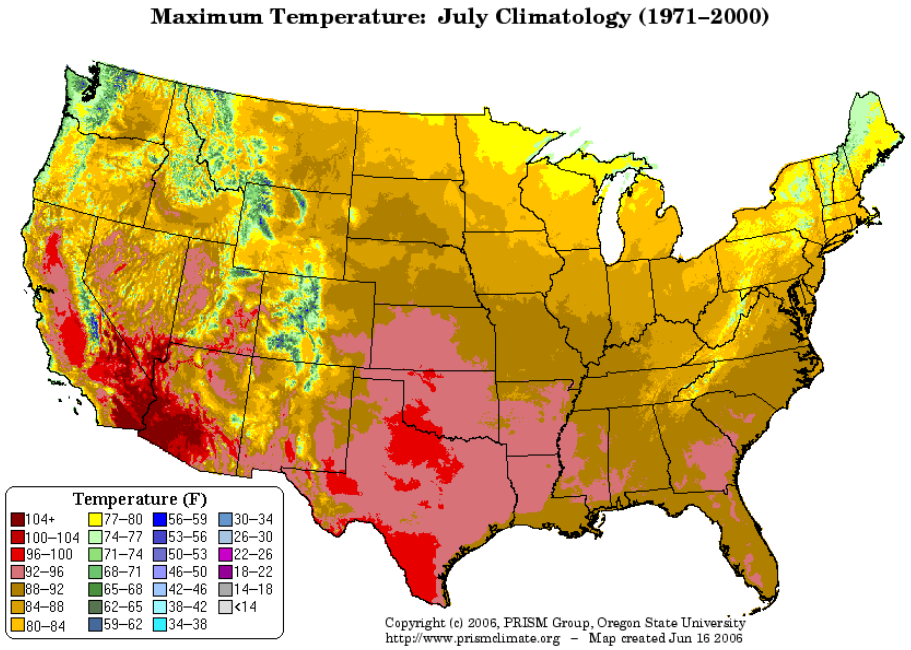


http://www.thefarm.org/charities/i4at/surv/solmap.htm

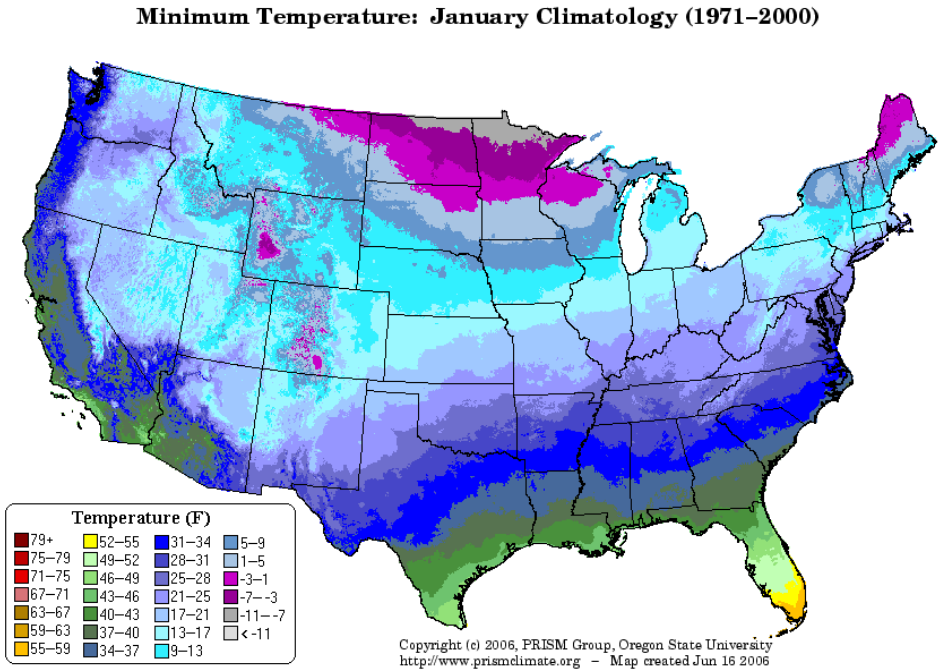
Few storms, but large storms

Most dramatic temperature changes

July and January Temperatures



July Average Maximum Temperatures



January Average Minimum Temperatures

Biggest and longest lasting droughts

Never enough rain, but
When it rains,
it pours

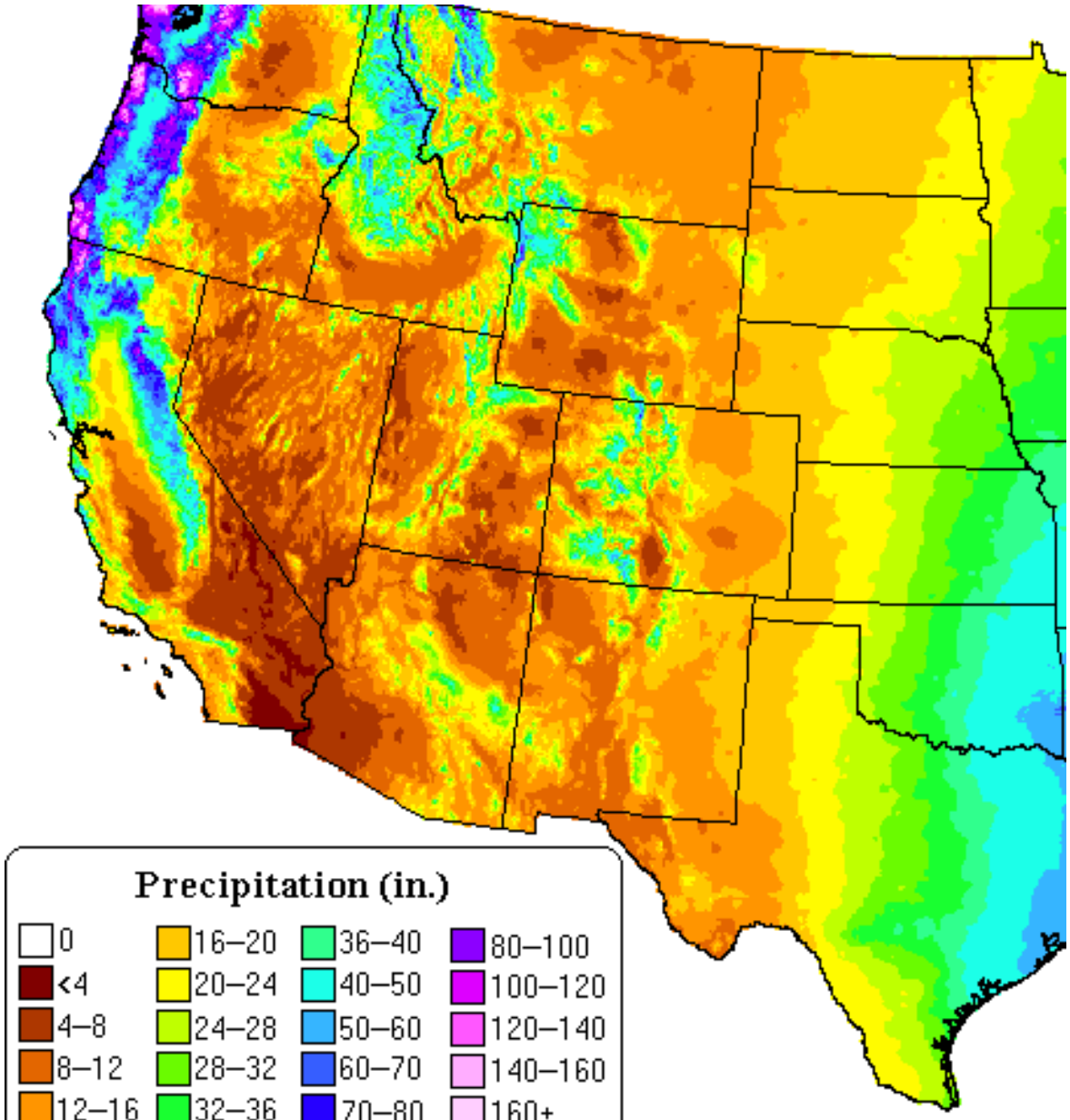
Blizzards

- When the “right” conditions do come together, we get some of the nastiest weather possible

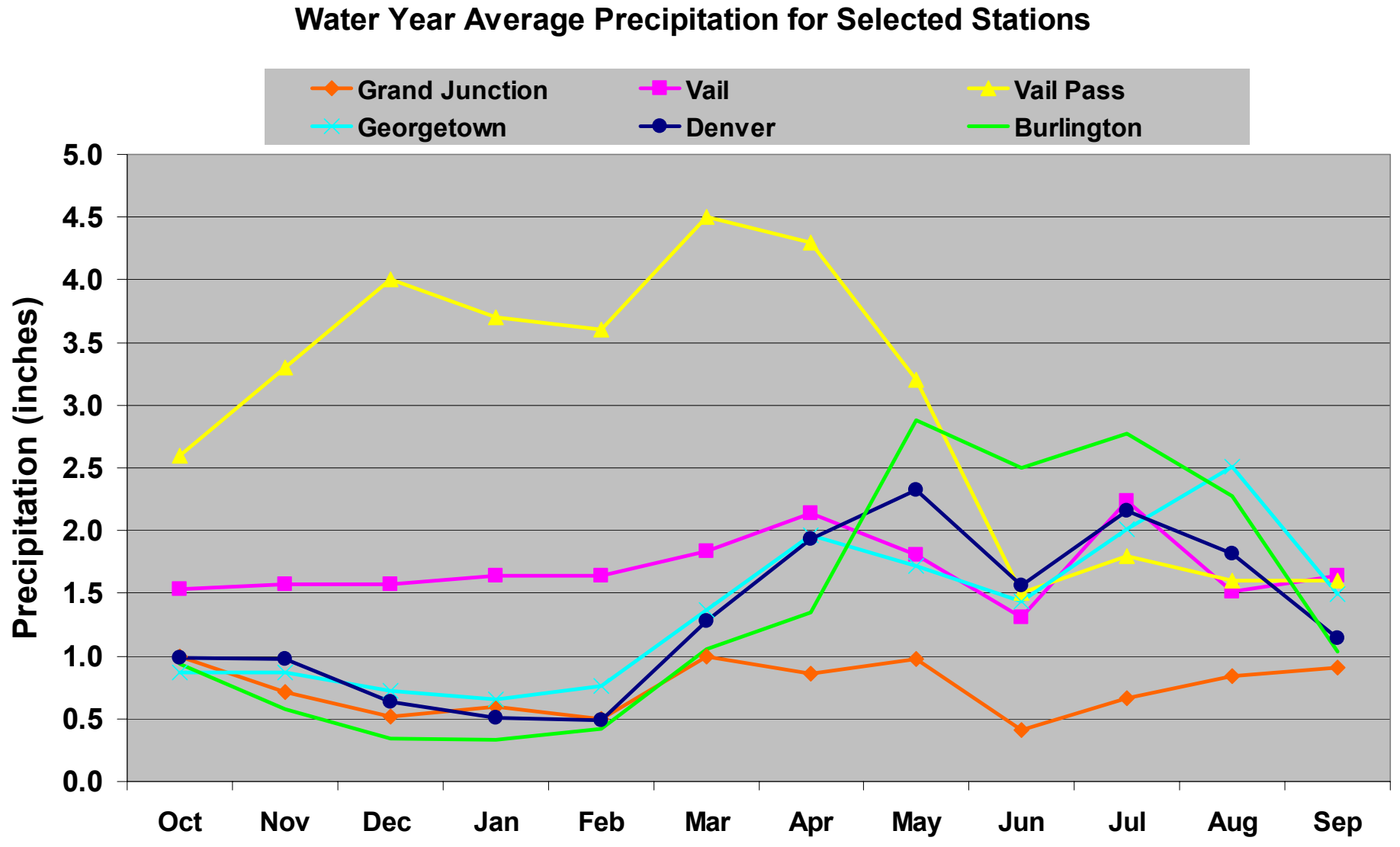
Hail Capital of North America

Other climate characteristics of our region

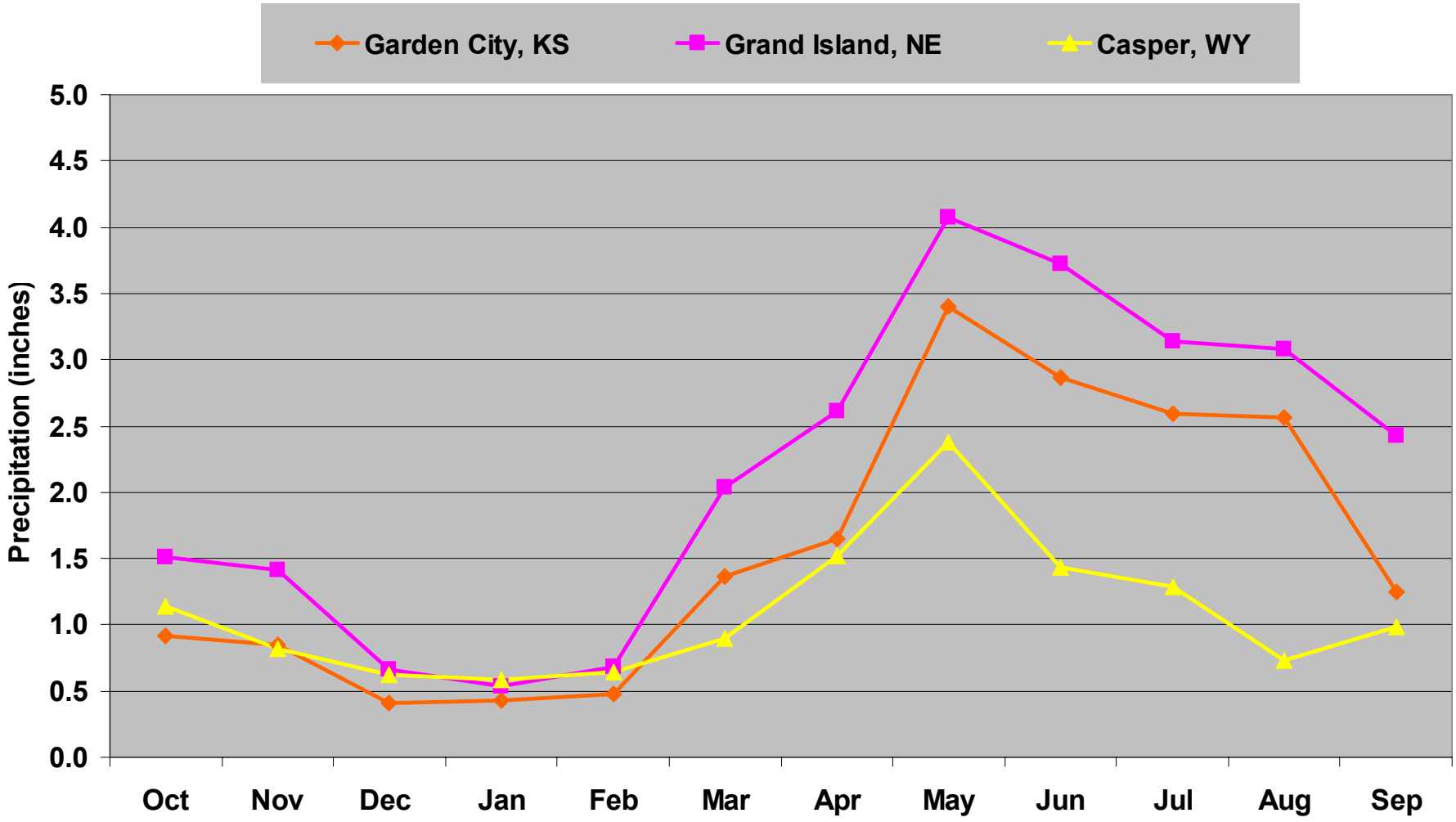
Rocky Mountain Rain Shadow



High Seasonal Variability in Precipitation



Water Year Average Precipitation for Selected Stations



Water Year 2006 – How did we fare?

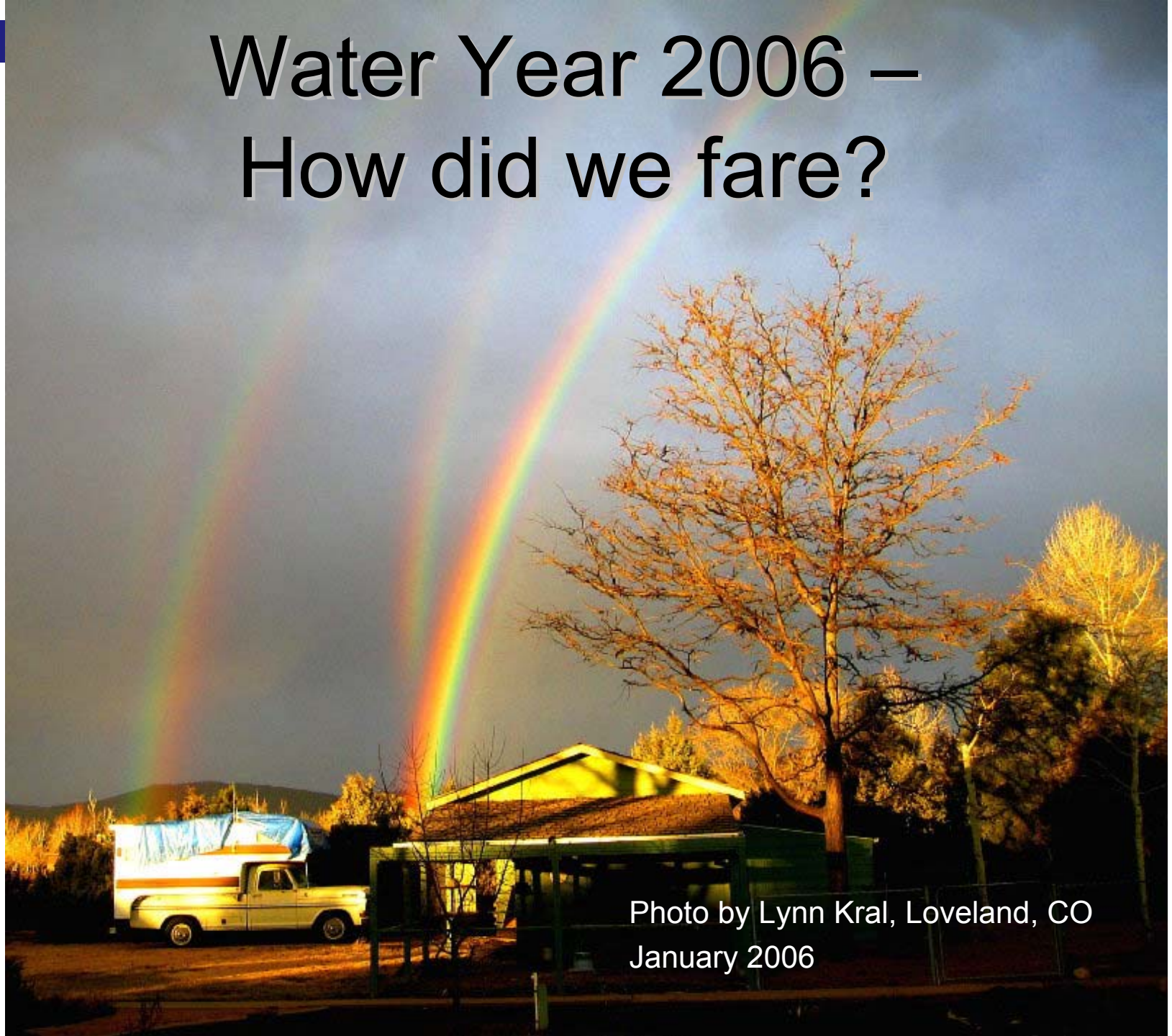
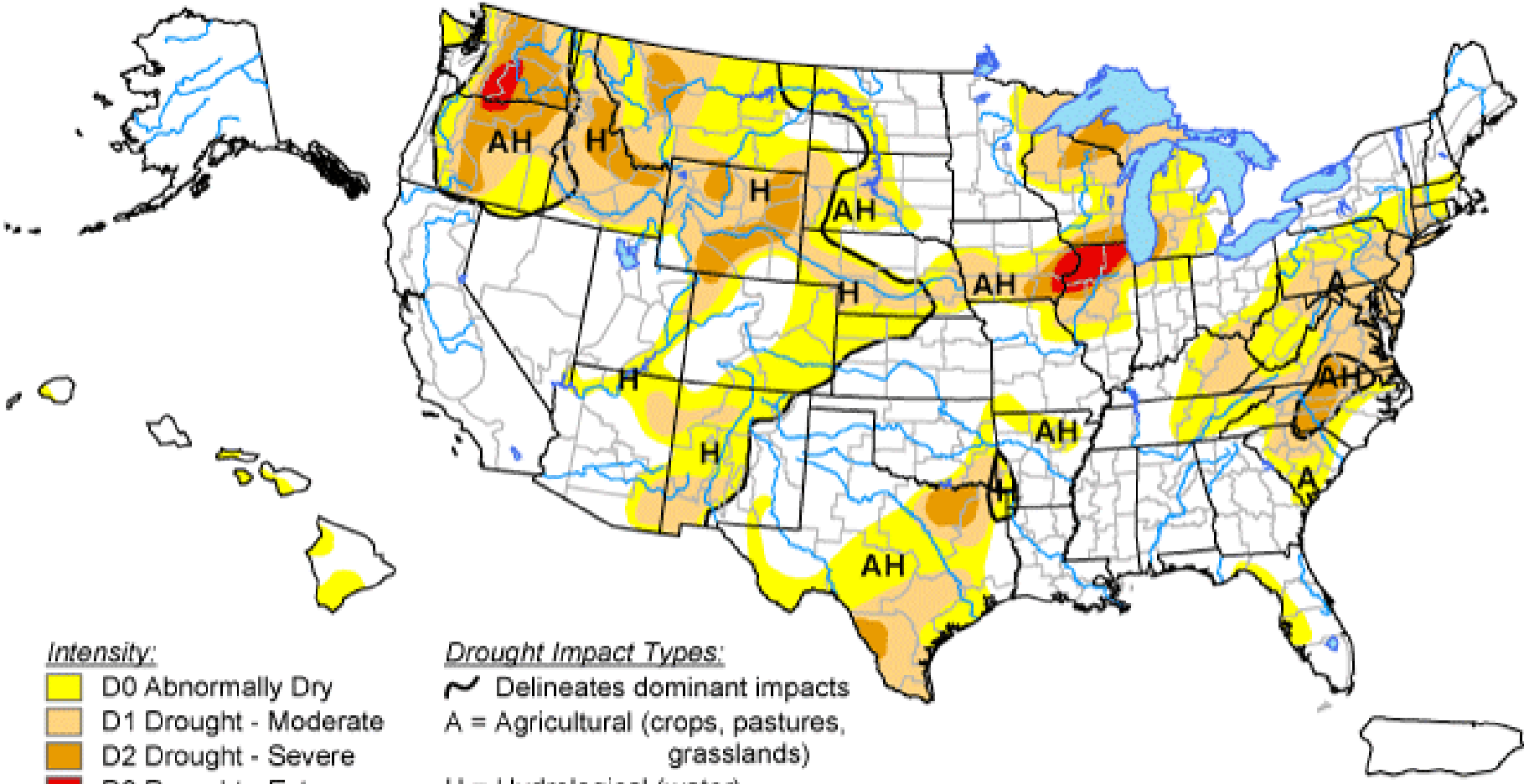


Photo by Lynn Kral, Loveland, CO
January 2006

U.S. Drought Monitor

October 4, 2005
Valid 8 a.m. EDT



Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:
- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)
- (No type = Both impacts)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

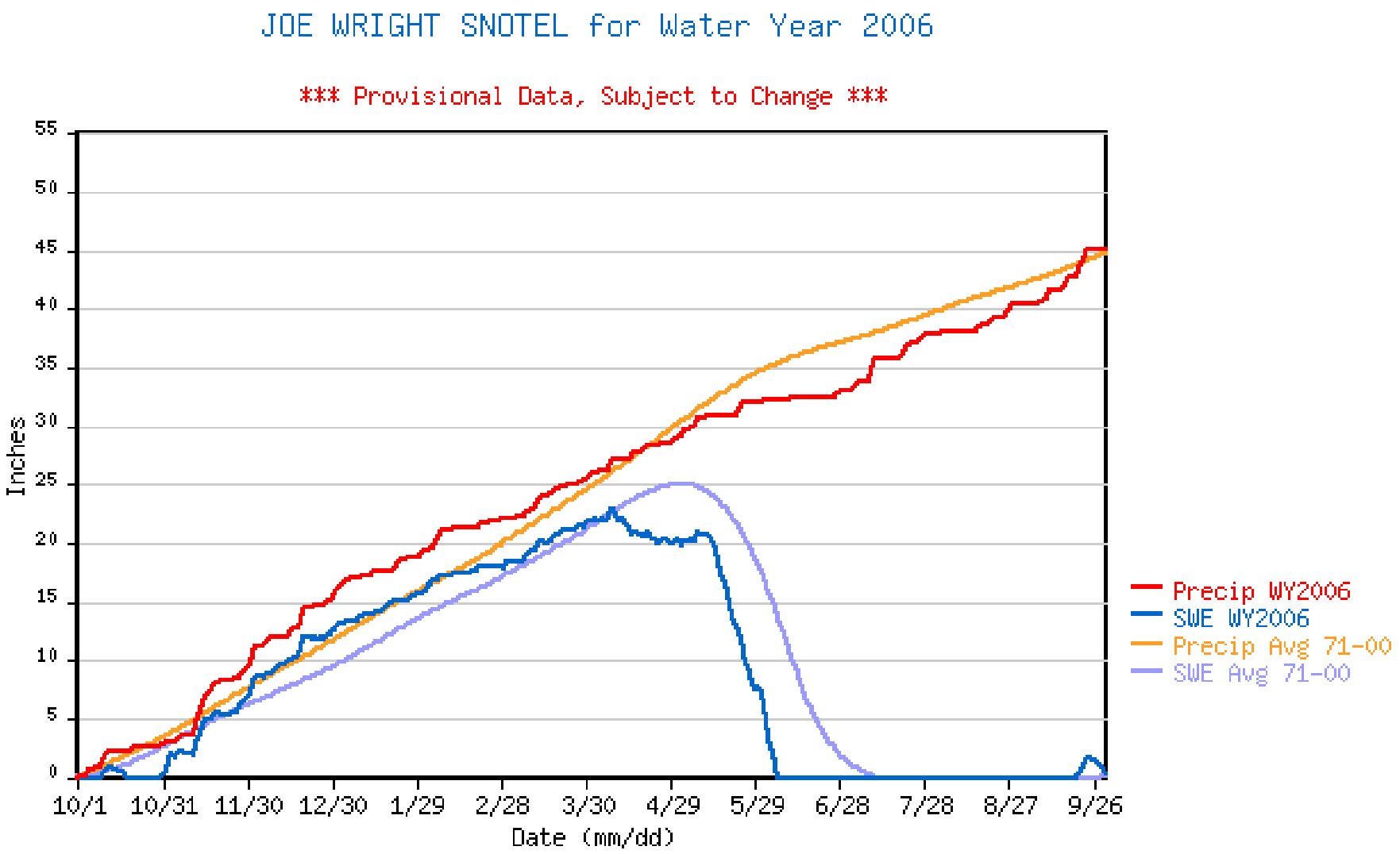
http://drought.unl.edu/dm

USDA National Drought Mitigation Center

Released Thursday, October 6, 2005

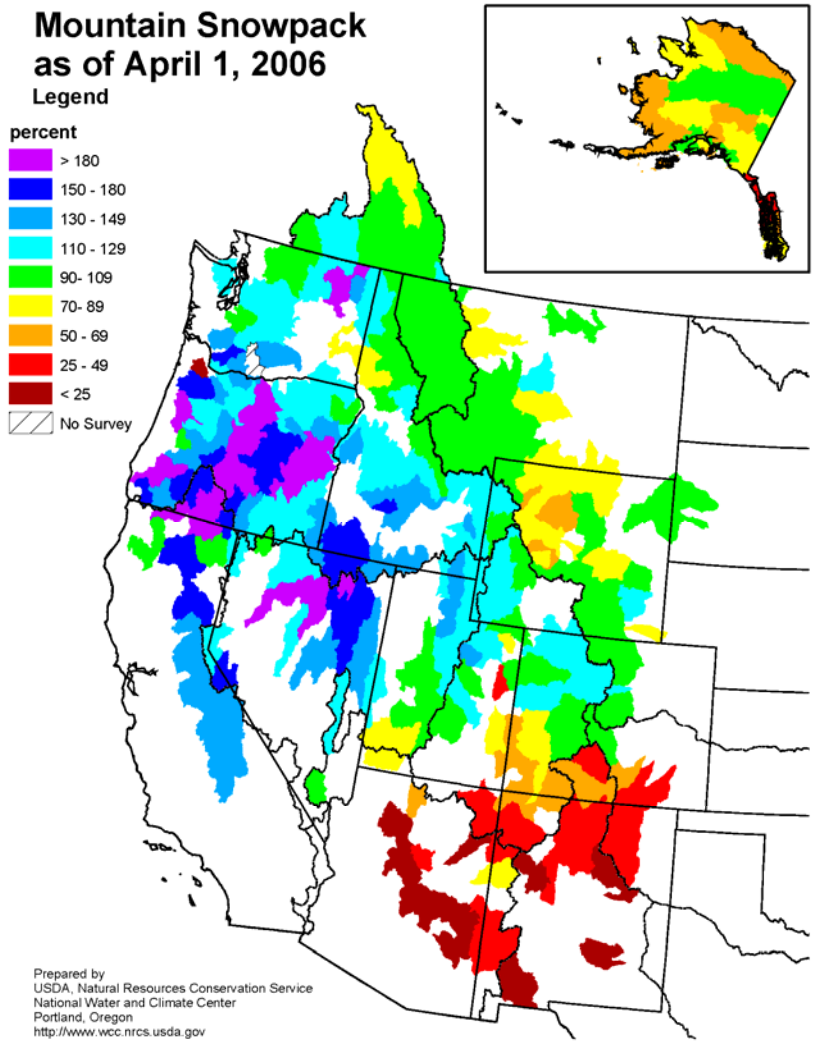
Author: RichTinker, CPC/NCEP/NWS/NOAA

Joe Wright Reservoir 2006 Snotel



April 1, 2006 Snowpack

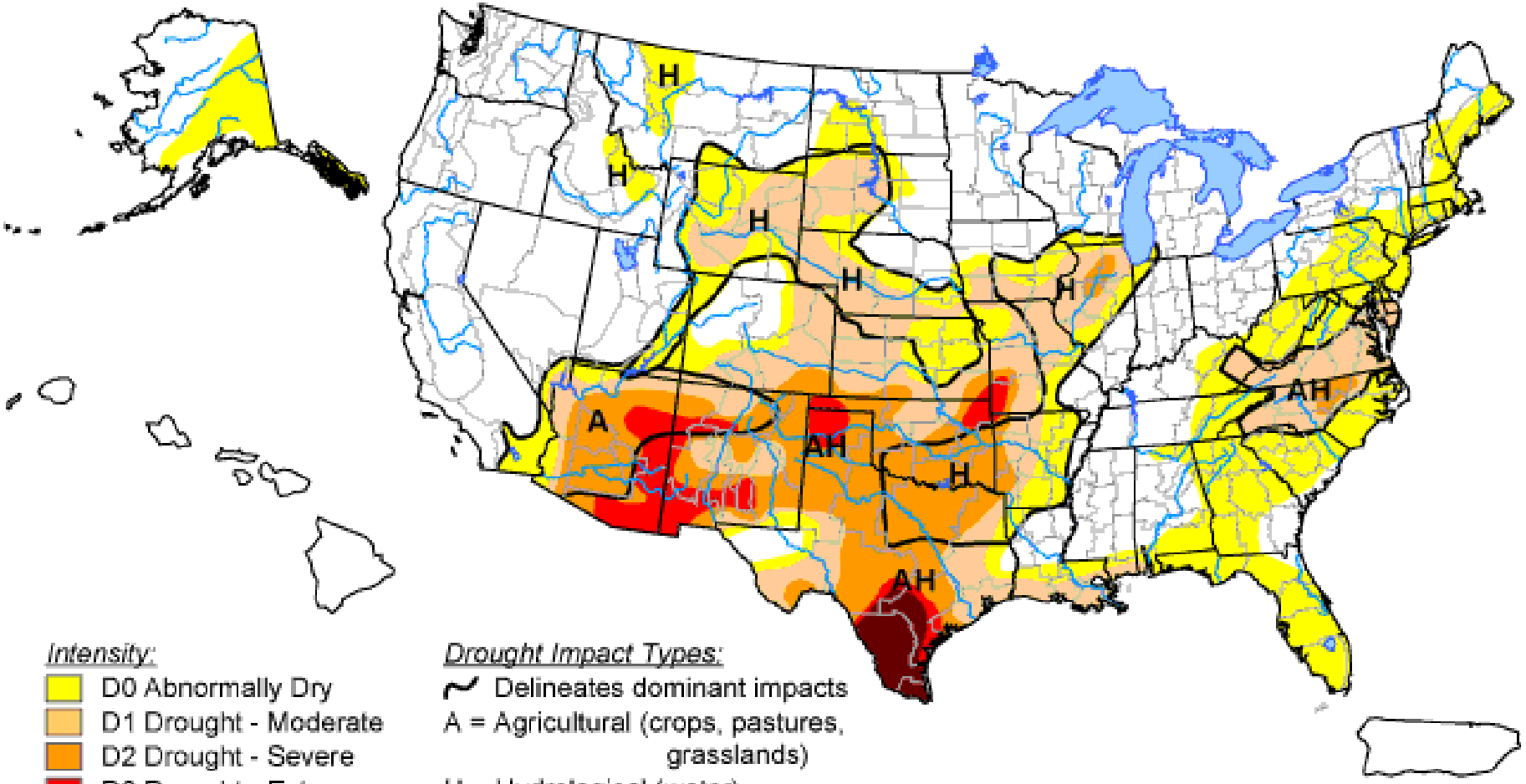
- Western US Snowpack as percent of average from NRCS



http://www.wcc.nrcs.usda.gov/cgibin/westsnow.pl

U.S. Drought Monitor

April 4, 2006
Valid 7 a.m. EST



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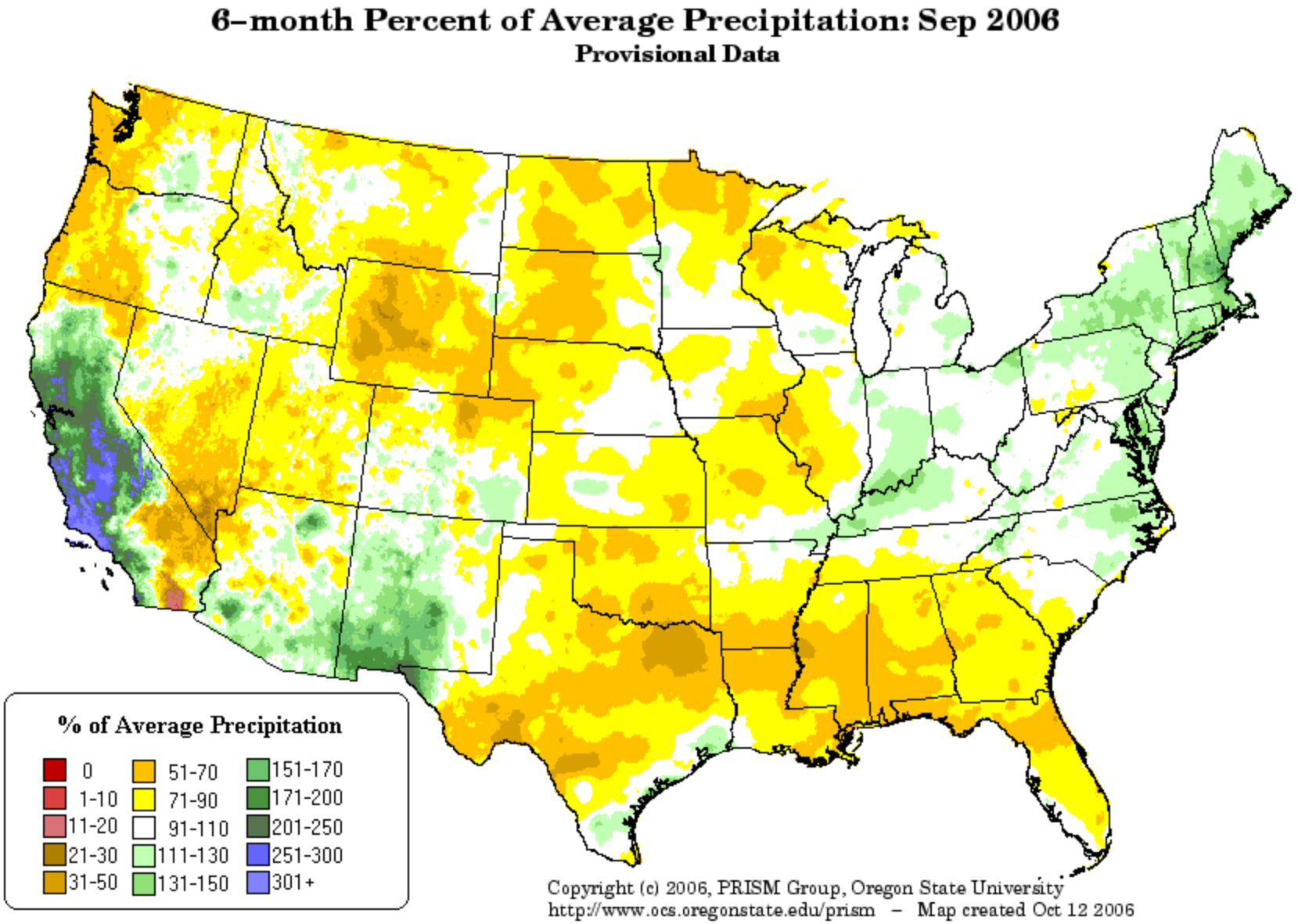
http://drought.unl.edu/dm

USDA | National Drought Mitigation Center

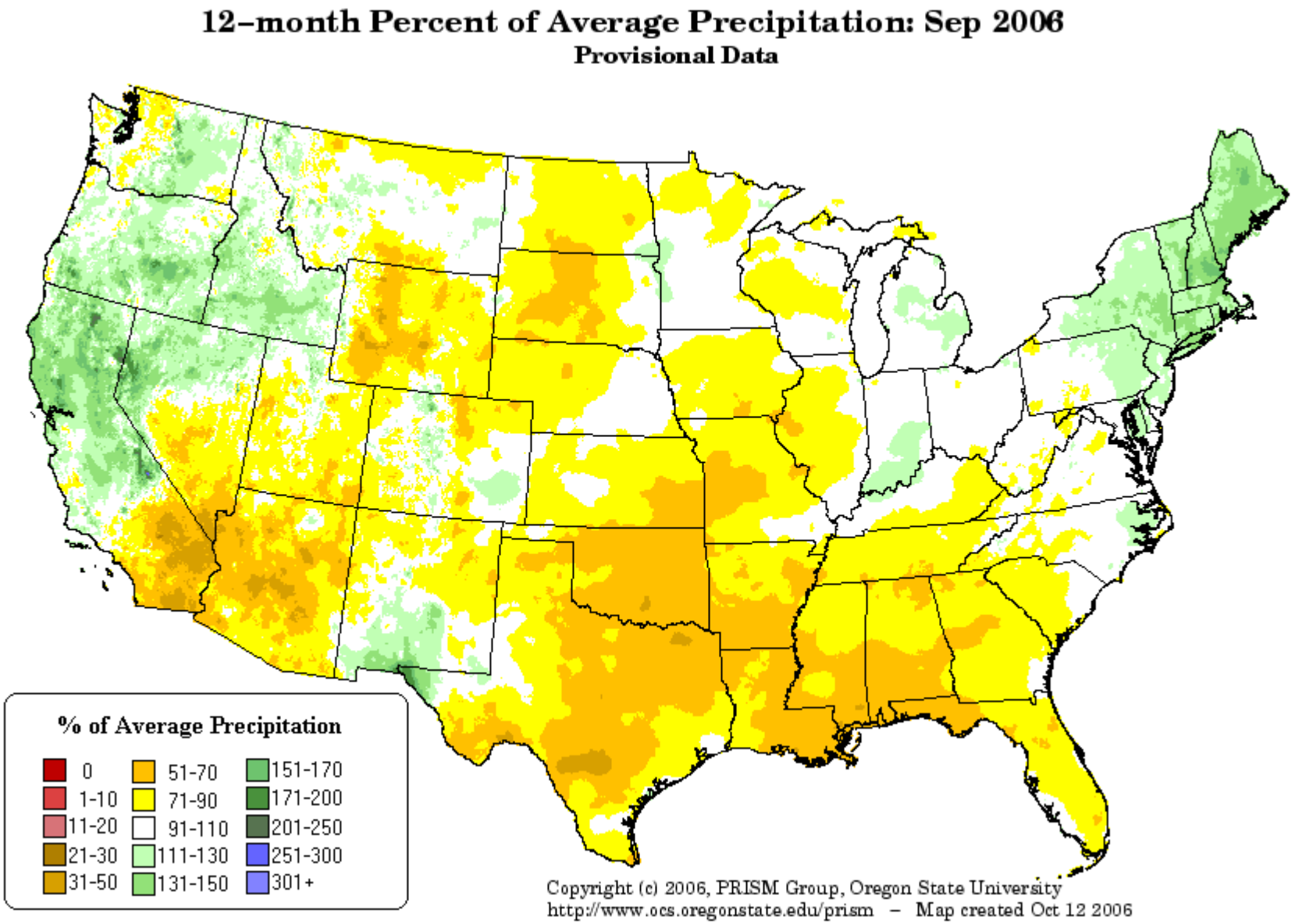
Released Thursday, April 6, 2006

Author: Douglas Le Comte, CPC/NOAA

Growing Season Precipitation

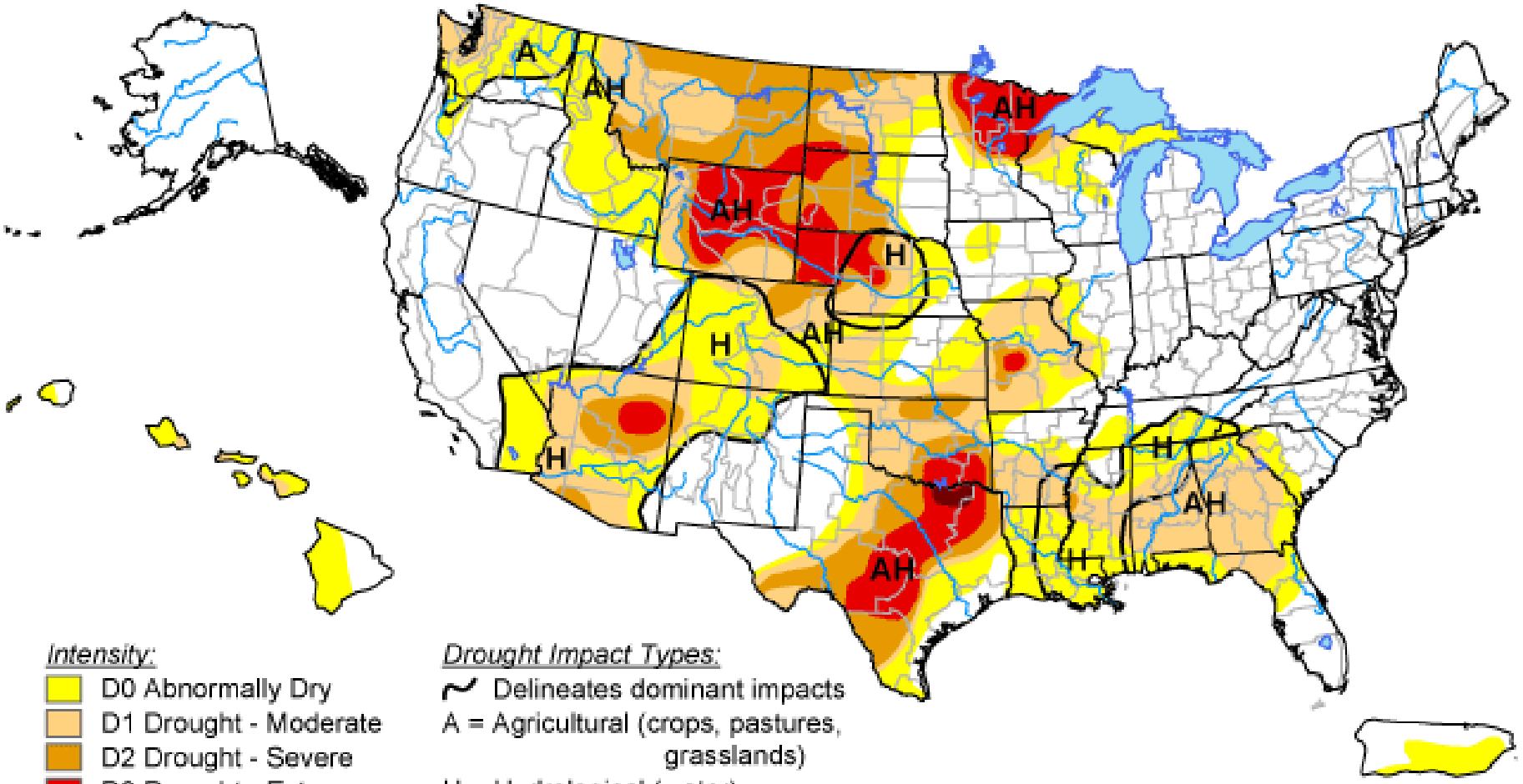


Water Year 2006 Precipitation Percent of Average



U.S. Drought Monitor

October 3, 2006
Valid 8 a.m. EDT



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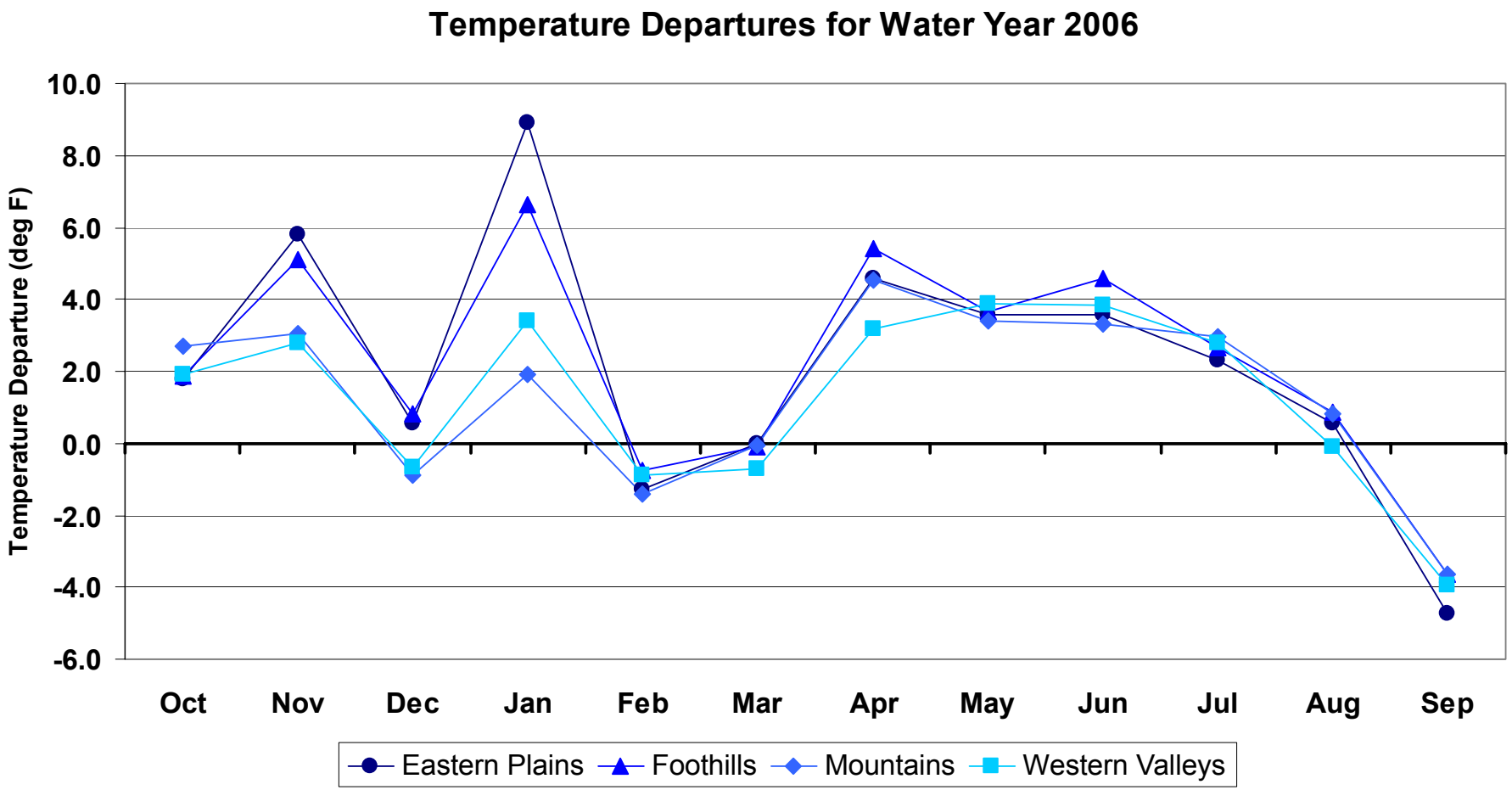
USDA National Drought Mitigation Center

Released Thursday, October 5, 2006

Author: Rich Tinker, Climate Prediction Center, NOAA

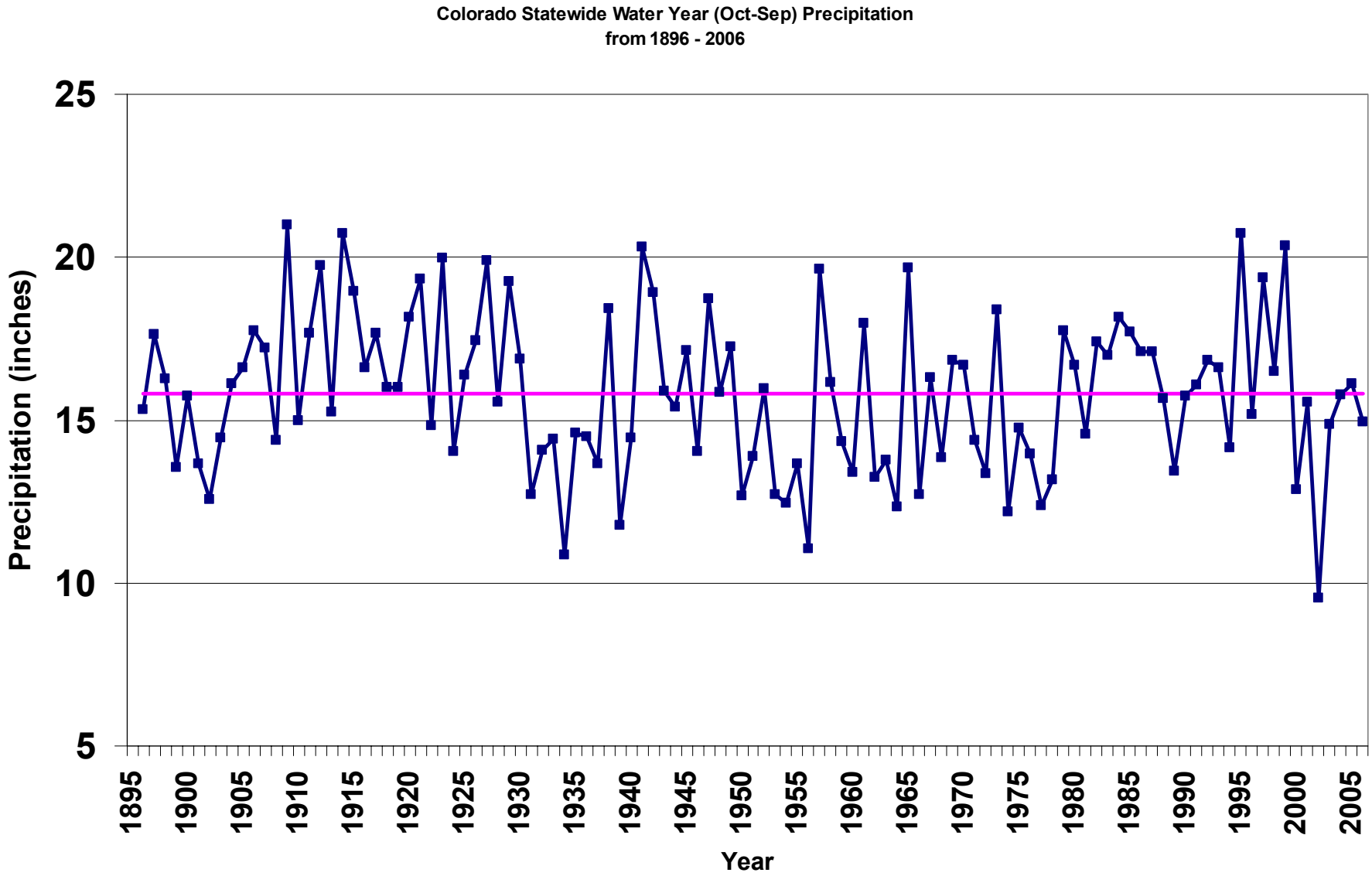
http://drought.unl.edu/dm

2006 Temperature Departure from Average

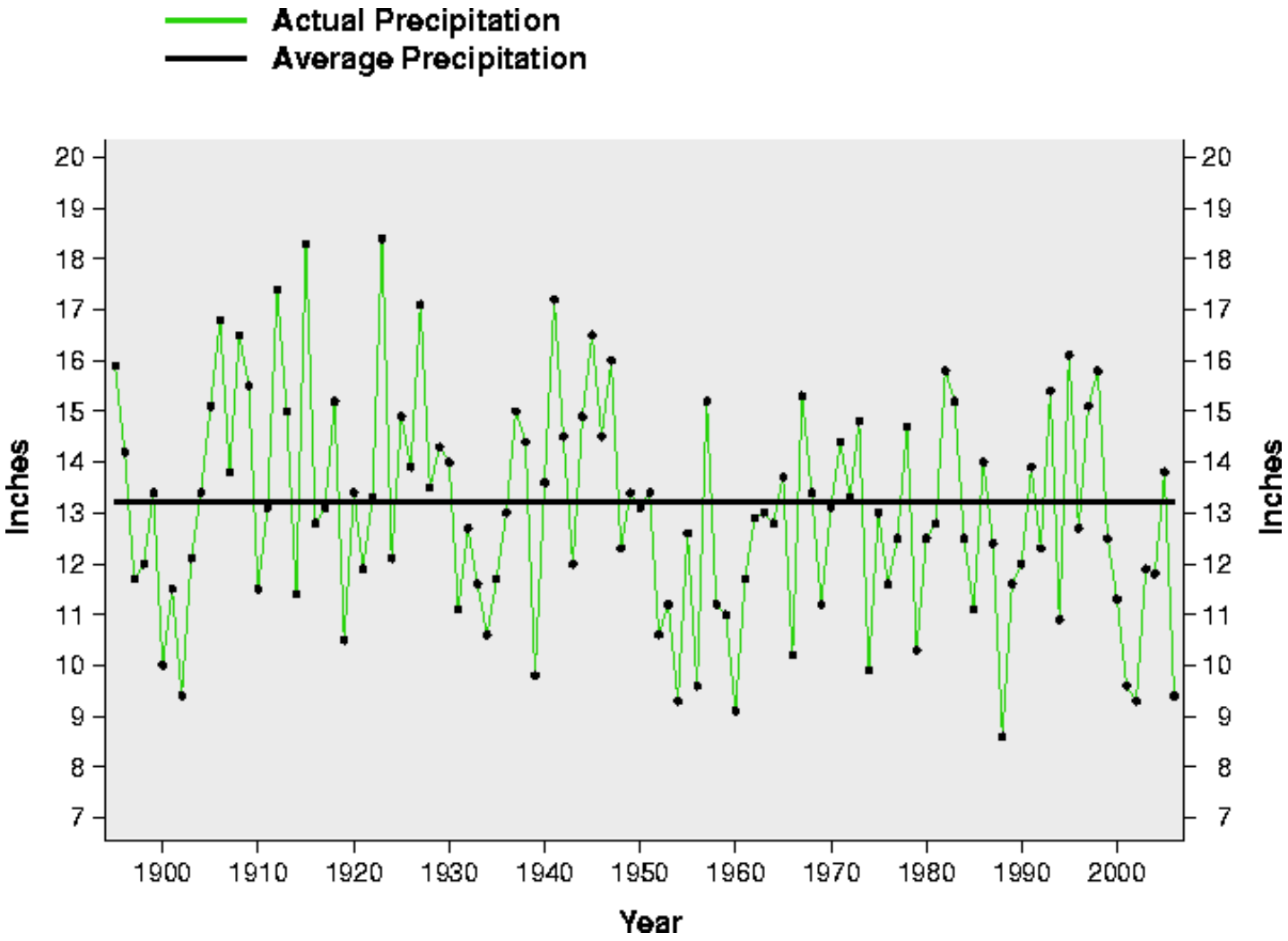


Historical Trends

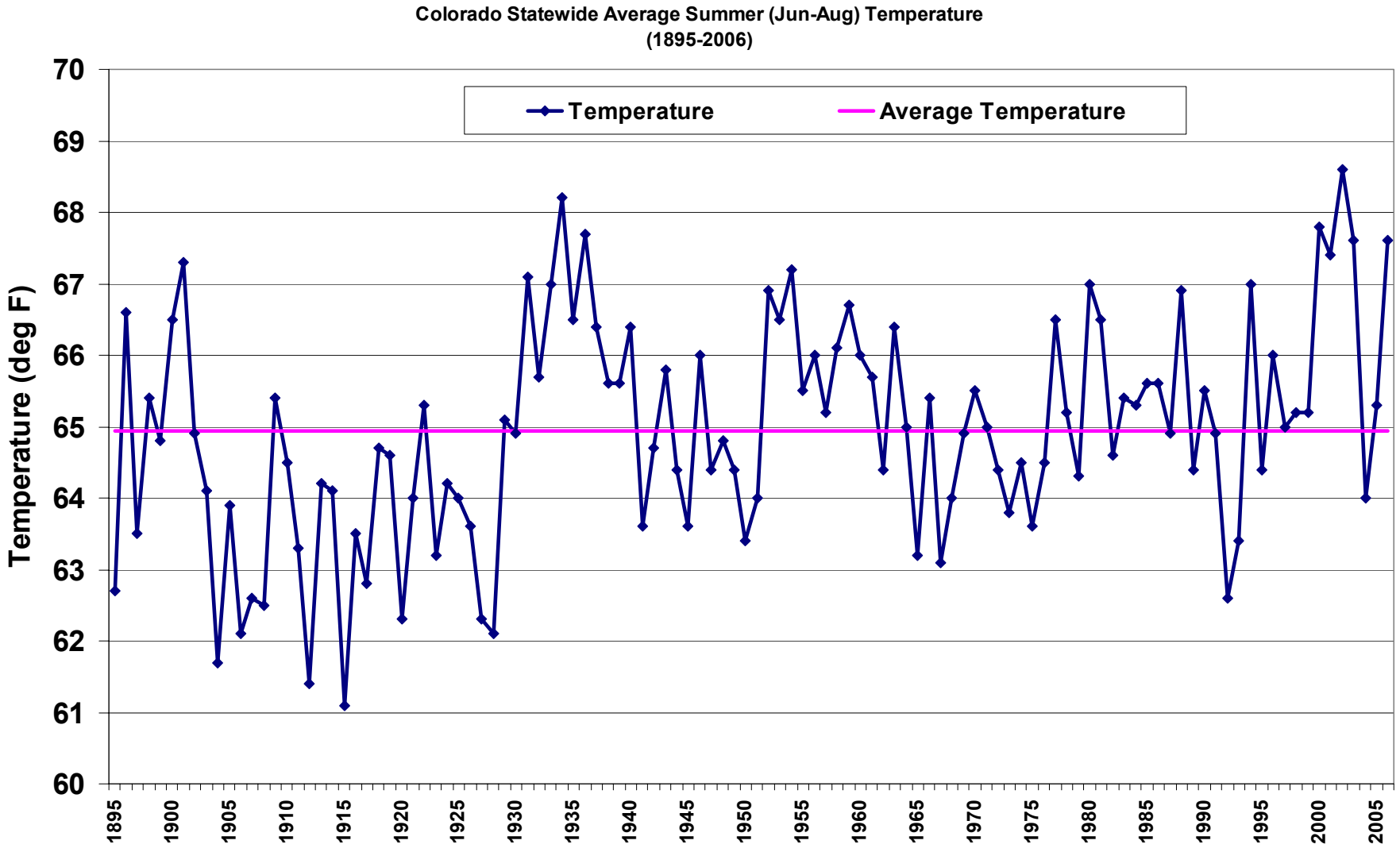
Colorado Statewide Water Year (Oct-Sep) Precipitation



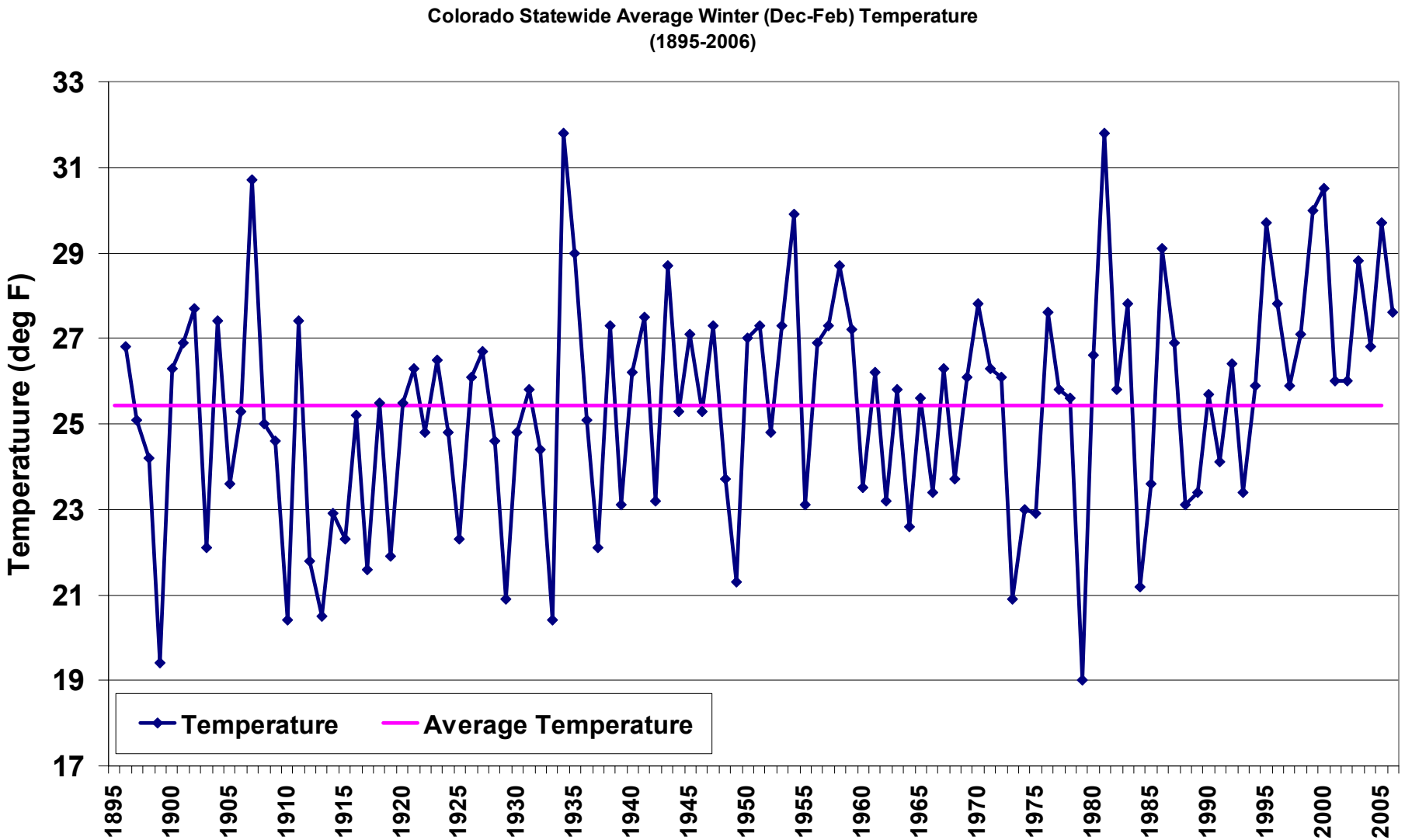
Wyoming Average Statewide Precipitation (Jan-Dec)



Colorado Statewide Average Summer (Jun-Aug) Temperature



Colorado Statewide Average Winter (Dec-Feb) Temperatures

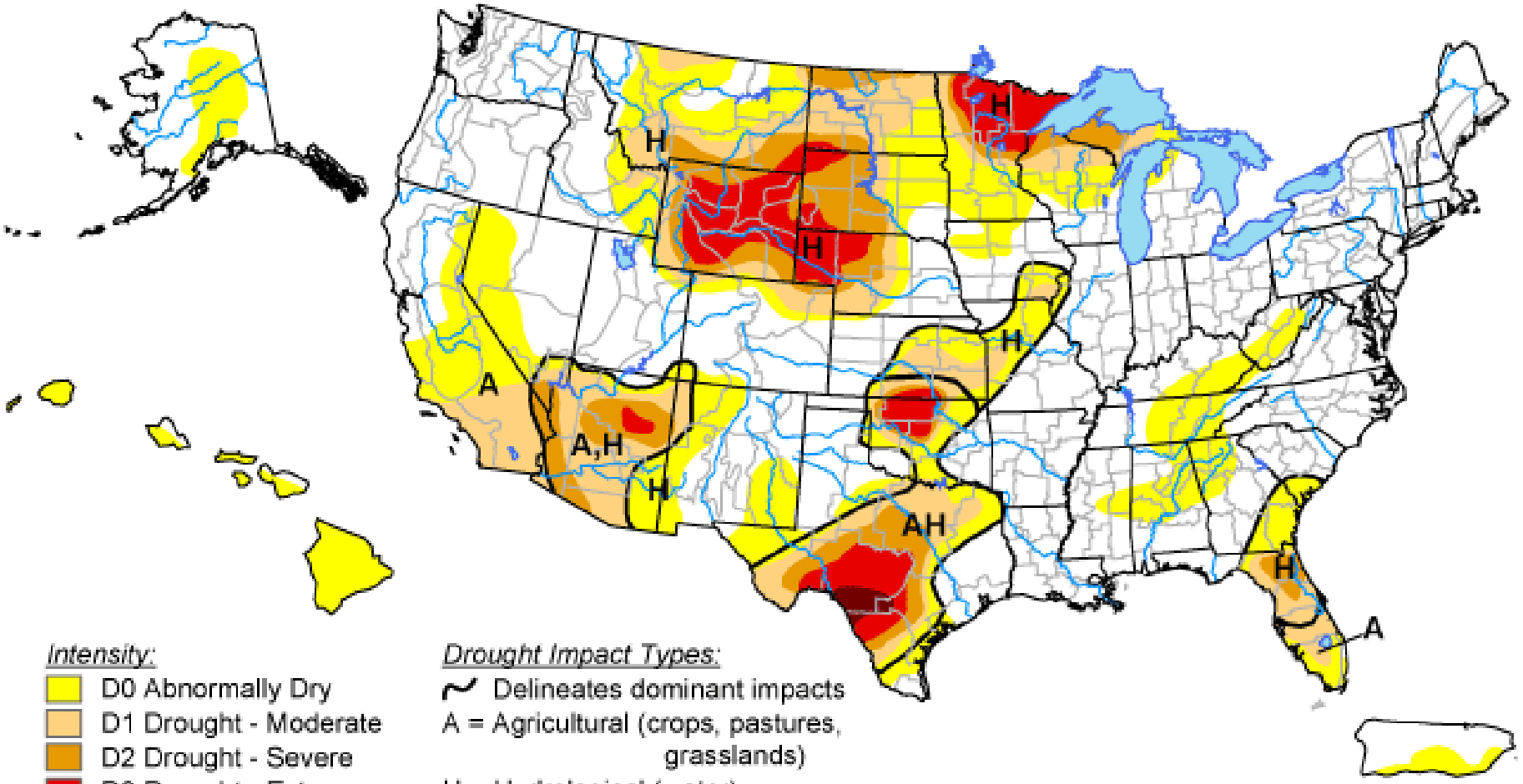


Where do we stand today?

Colorado Snowcover

U.S. Drought Monitor

January 16, 2007
Valid 7 a.m. EST



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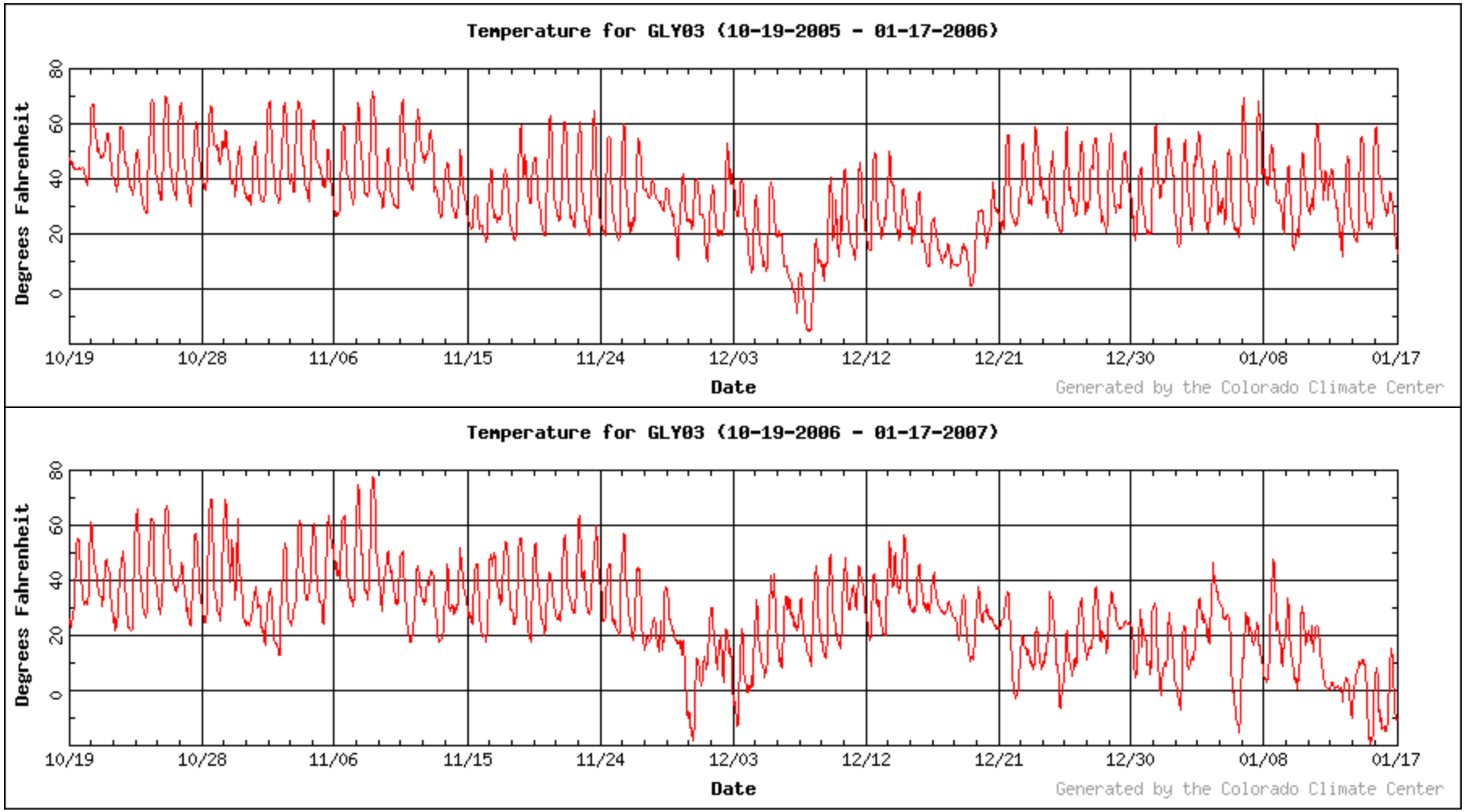
USDA National Drought Mitigation Center

Released Thursday, January 18, 2007

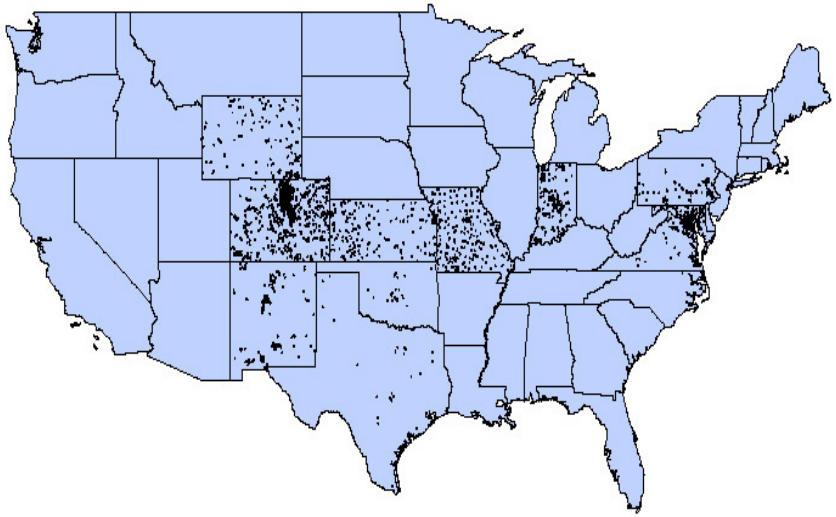
Author: David Miskus, JAWF/CPC/NOAA

Greeley, CO, CoAgMet



CoCoRaHS – A chance to help!

www.cocorahs.org



CoCoRaHS

Community Collaborative Rain, Hail & Snow Network

What is CoCoRaHS?

CoCoRaHS is a unique, non-profit community based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow).

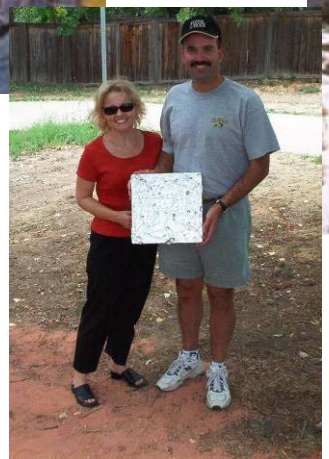


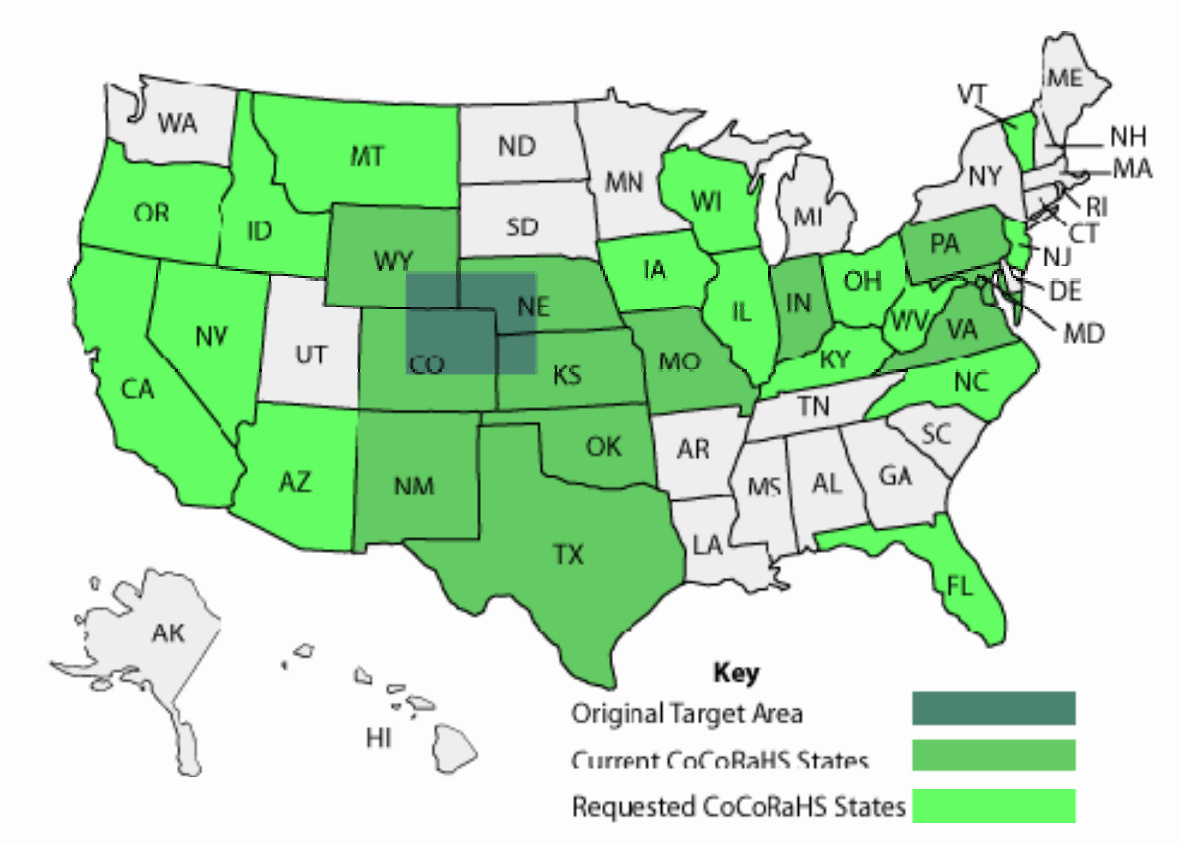
Photo by Henry Reges

CoCoRaHS – Supplementing NWS Cooperative Program to Improve Precipitation Measurements

Photo by Henry Reges

Help us expand CoCoRaHS!

- There is no better way to learn to understand your water supply than to measure it yourself and see the variations



www.cocorahs.org

A water education idea

Colorado Climate Center

Data and Power Point Presentations available for downloading

http://ccc.atmos.colostate.edu

- click on “Drought”
- then click on “Presentations”

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